

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

5      **Listing of Claims:**

Claim 1 (original): A pair of dry type patches for teeth whitening having a patch for upper teeth and a patch for lower teeth, in which the patch for upper teeth has a shape different from the patch for lower teeth, and each patch has a controlled width and shape such that the contact area  
10 of each patch with gums is minimized.

Claim 2 (original): The pair of dry type patches for teeth whitening according to claim 1, wherein the patch for upper teeth has a central portion covering right and left upper central incisors which is widest, and the patch for lower teeth has either portion covering right and left lower canine  
15 teeth which is widest.

Claim 3 (original): The pair of dry type patches for teeth whitening according to claim 1, wherein adhesive strength of the patches to the teeth at least doubles when hydrated by water.

20      Claim 4 (original): The pair of dry type patches for teeth whitening according to claim 2, wherein adhesive strength of the patches to the teeth at least doubles when hydrated by water.

Claim 5 (currently amended): The pair of dry type patches for teeth whitening according to claim 1, wherein the patches comprise peroxide as a teeth whitening agent and a hydrophilic

~~glassyy~~ glassy polymer.

5      Claim 6 (currently amended): The pair of dry type patches for teeth whitening according to claim 2, wherein the patches comprise peroxide as a teeth whitening agent and a hydrophilic ~~glassyy~~ glassy polymer.

Claim 7 (original): The pair of dry type patches for teeth whitening according to claim 5, wherein the patches further comprise a peroxide stabilizer together with peroxide.

10      Claim 8 (original): The pair of dry type patches for teeth whitening according to claim 6, wherein the patches further comprise a peroxide stabilizer together with peroxide.

15      Claim 9 (original): The pair of dry type patches for teeth whitening according to claim 1, wherein each patch has a width similar to the size of teeth so as not to be folded into the back portion of teeth.

20      Claim 10 (original): The pair of dry type patches for teeth whitening according to claim 2, wherein each patch has a width similar to the size of teeth so as not to be folded into the back portion of teeth.

25      Claim 11 (original): The pair of dry type patches for teeth whitening according to claim 1, wherein each patch is folded into the back portion of teeth, and has a cut line at the folded portion so as to be easily folded into the back portion of teeth.

Claim 12 (original): The pair of dry type patches for teeth whitening according to claim 2, wherein each patch is folded into the back portion of teeth, and has a cut line at the folded portions so as to be easily folded into the back portion of teeth.

5      Claim 13 (original): The pair of dry type patches for teeth whitening according to claim 1, wherein the patch for upper teeth has a width of 0.5~2.5cm, and the patch for lower teeth has a width of 0.3~2.0cm.

10      Claim 14 (original): The pair of dry type patches for teeth whitening according to claim 2, wherein the patch for upper teeth has a width of 0.5~2.5cm, and the patch for lower teeth has a width of 0.3~2.0cm.

15      Claim 15 (original): The pair of dry type patches for teeth whitening according to claim 13, wherein the patch for upper teeth has a width of 0.7~1.5cm, and has a greatest width of 0.8~1.5cm.

20      Claim 16 (original): The pair of dry type patches for teeth whitening according to claim 14, wherein the patch for upper teeth has a width of 0.7~1.5cm, and has a greatest width of 0.8~1.5cm.

Claim 17 (original): The pair of dry type patches for teeth whitening according to claim 13, wherein the patch for lower teeth has a width of 0.5~1.5cm, and has a greatest width of 0.6~1.5cm.

Claim 18 (original): The pair of dry type patches for teeth whitening according to claim 14, wherein the patch for lower teeth has a width of 0.5~1.5cm, and has a greatest width of 0.6~1.5cm.

5 Claim 19 (original): The pair of dry type patches for teeth whitening according to claim 1, wherein the patches comprise a water-insoluble outermost layer.

Claim 20 (original): The pair of dry type patches for teeth whitening according to claim 1, wherein the patch for upper teeth and/or the patch for lower teeth include a notch formed at the  
10 center of the portion contacted with gums.

Claim 21 (original): A patch for teeth whitening and having a contact area, comprising:

a gum line perimeter segment, the gum line perimeter segment being shaped  
to substantially match a human gum line; and

15 at least one perimeter segment, the at least one other perimeter segment  
joining with the gum line perimeter segment to define a perimeter of the contact area;

Claim 22 (original): The patch of claim 21, wherein the gum line perimeter segment comprises  
a wide portion.

20 Claim 23 (original): The patch of claim 22, wherein the wide portion is shaped for aligning  
contact with upper central incisor teeth.

Claim 24 (original): The patch of claim 21, wherein the gum line perimeter segment comprises a plurality of wide portions.

5 Claim 25 (original): The patch of claim 24, wherein each of the plurality of wide portions are shaped for aligning contact with lower canine teeth.

Claim 26 (original): The patch of claim 21, wherein the patch comprises a dry-type patch

10 Claim 27 (original): The patch of claim 21, comprising at least one alignment indicia positioned along the gum line perimeter segment.

Claim 28 (original): The patch of claim 27, wherein the at least one alignment indicia is centered along the gum line perimeter segment.

15 Claim 29 (original): The patch of claim 27, wherein a plurality of alignment indicia are spaced along the gum line perimeter segment.

Claim 30 (original): The patch of claim 27, wherein the at least one alignment indicia comprises a notch.

20 Claim 31 (original): The patch of claim 31, wherein the at least one alignment indicia comprises a graphical indicator on the surface of the patch.

Claim 32 (original): The patch of claim 27, wherein the graphical indicator comprises:

an alignment line; and

a point of intersection between the alignment line and the gum line perimeter segment;

5                      wherein the alignment line is substantially perpendicular to the gum line segment at the point of intersection.

Claim 33 (original): The patch of claim 21, comprising:

a first side indicia positioned on the at least one perimeter segment;

10                      and

a second side indicia positioned on the at least one perimeter segment opposing the first side indicia along a substantially horizontal axis;

wherein the substantially horizontal axis comprises a folding axis.

15      Claim 34 (original): The patch of claim 33, wherein the first side indicia comprises a first side notch, and wherein the second side indicia comprises a second side notch.

Claim 35 (original): The patch of claim 23, wherein the at least one perimeter segment comprises:

20                      an opposing perimeter segment being opposite the gum line perimeter segment; and

a plurality of side perimeter segments joining the gum line perimeter segment and the opposing perimeter segment.

25

Claim 36 (original): The patch of claim 35, wherein the gum line perimeter segment comprises a wide portion.

5 Claim 37 (original): The patch of claim 36, wherein the wide portion is shaped for aligning contact with upper central incisor teeth.

Claim 38 (original): The patch of claim 35, wherein the gum line perimeter segment comprises a plurality of wide portions.

10 Claim 39 (original): The patch of claim 38, wherein each of the plurality of wide portions are shaped for aligning contact with lower canine teeth.

Claim 40 (original): The patch of claim 35, wherein the patch comprises a dry-type patch.

15 Claim 41 (original): The patch of claim 35, comprising at least one alignment indicia positioned along the gum line perimeter segment.

Claim 42 (original): The patch of claim 41, wherein the at least one alignment indicia is centered along the gum line perimeter segment.

20 Claim 43 (original): The patch of claim 41, wherein a plurality of alignment indicia are spaced along the gum line perimeter segment.

Claim 44 (original): The patch of claim 41, wherein the at least one alignment indicia comprises a notch.

Claim 45 (original): The patch of claim 41, wherein the at least one alignment indicia  
5 comprises a graphical indicator on the surface of the patch.

Claim 46 (original): The patch of claim 45, wherein the graphical indicator comprises:

an alignment line; and

a point of intersection between the alignment line and the gum line perimeter  
10 segment;

wherein the alignment line is substantially perpendicular to the gum line  
segment at the point of intersection.

Claim 47 (original): The patch of claim 35, comprising:

15 a first side indicia positioned on the at least one perimeter segment;

and

a second side indicia positioned on the at least one perimeter  
segment opposing the first side indicia along a substantially horizontal axis;

wherein the substantially horizontal axis comprises a folding axis.

20 Claim 48 (original): The patch of claim 47, wherein the first side indicia comprises a first side notch, and wherein the second side indicia comprises a second side notch.



Claim 49 (original): The patch of claim 35, wherein at least one cut line extends from the opposing perimeter segment to inside the perimeter of the contact area.

5 Claim 50 (original): The patch of claim 49, wherein the at least one cut line comprises two cut lines.

Claim 51 (original): The patch of claim 50, wherein a first of the two cut lines intersects the opposing perimeter segment at a normal angle, and wherein a second of the two cut lines intersects the opposing perimeter segment at another normal angle.

10 Claim 52 (original): The patch of claim 35, wherein the at least one perimeter segment comprises a plurality of recessed perimeter segments.

15 Claim 53 (original): The patch of claim 35, wherein the opposing perimeter segment comprises a plurality of recessed perimeter segments.

Claim 54 (original): The patch of claim 53, wherein the recessed perimeter segments recess from the opposing perimeter segment towards the gum line perimeter segment.

20 Claim 55 (original): The patch of claim 54, wherein the recessed perimeter segments recess from the opposing perimeter segment towards the gum line perimeter segment to define a noncontact area, said noncontact area for aligning noncontact with upper lateral incisor teeth.

Claim 56 (original): The patch of claim 54, wherein the recessed perimeter segments recess from the opposing perimeter segment towards the gum line perimeter segment to define a noncontact area, said noncontact area for aligning noncontact with lower lateral incisor teeth.

5 Claim 57 (original): The patch of claim 54, comprising a first contact area width of 0.7~1.5cm and a second contact area width of 0.8~1.5cm.

Claim 58 (original): The patch of claim 54, comprising a first contact area width of 0.5~1.5cm and a second contact area width of 0.6~1.5cm.

10

Claim 59 (original): The patch of claim 35, comprising a contact area width of 0.5~2.5cm.

Claim 60 (original): The patch of claim 35, comprising a contact area width of 0.5~2.5cm.

15 Claim 61 (original): A contact surface for a flexible teeth whitening material, the contact surface having a contact area comprising:

a gum line perimeter segment, the gum line perimeter segment being shaped to substantially match a human gum line; and

at least one perimeter segment, the at least one other perimeter segment  
20 joining with the gum line perimeter segment to define a perimeter of the contact area.

Claim 62 (original): The contact surface of claim 61, wherein the at least one perimeter segment comprises:

an opposing perimeter segment being opposite the gum line perimeter

segment; and

a plurality of side perimeter segments joining the gum line perimeter segment  
and the opposing perimeter segment.

5      Claim 63 (original): The contact surface of claim 62, wherein the gum line perimeter segment  
comprises a wide portion.

Claim 64 (original): The contact surface of claim 63, wherein the wide portion is shaped for  
aligning contact with upper central incisor teeth.

10

Claim 65 (original): The contact surface of claim 62, wherein the gum line perimeter segment  
comprises a plurality of wide portions.

15      Claim 66 (original): The contact surface of claim 65, wherein each of the plurality of wide  
portions are shaped for aligning contact with lower canine teeth.

Claim 67 (original): The contact surface of claim 61, wherein the flexible teeth whitening  
material comprises a patch.

20      Claim 68 (original): The contact surface of claim 67, wherein the patch comprises a dry-type  
patch.

Claim 69 (original): The contact surface of claim 62, comprising at least one alignment indicia  
positioned along the gum line perimeter segment.

Claim 70 (original): The contact surface of claim 69, wherein the at least one alignment indicia is centered along the gum line perimeter segment.

5 Claim 71 (original): The contact surface of claim 69, wherein a plurality of alignment indicia are spaced along the gum line perimeter segment.

Claim 72 (original): The contact surface of claim 69, wherein the at least one alignment indicia comprises a notch.

10

Claim 73 (original): The contact surface of claim 69, wherein the at least one alignment indicia comprises a graphical indicator on the surface of the patch.

15 Claim 74 (original): The contact surface of claim 73, wherein the graphical indicator comprises:

an alignment line; and

a point of intersection between the alignment line and the gum line perimeter segment;

20 wherein the alignment line is substantially perpendicular to the gum line segment at the point of intersection.

Claim 75 (original): The contact surface of claim 61, comprising:

a first side indicia positioned on the at least one perimeter segment;

and

a second side indicia positioned on the at least one perimeter

segment opposing the first side indicia along a substantially horizontal axis;

wherein the substantially horizontal axis comprises a folding axis.

Claim 76 (original): The contact surface of claim 75, wherein the first side indicia comprises a first side notch, and wherein the second side indicia comprises a second side notch.

Claim 77 (original): The contact surface of claim 62, wherein at least one cut line extends from the opposing perimeter segment to inside the perimeter of the contact area.

Claim 78 (original): The contact surface of claim 77, wherein the at least one cut line comprises two cut lines.

Claim 79 (original): The contact surface of claim 78, wherein a first of the two cut lines intersects the opposing perimeter segment at a normal angle, and wherein a second of the two cut lines intersects the opposing perimeter segment at another normal angle.

Claim 80 (original): The contact surface of claim 61, wherein the at least one perimeter segment comprises a plurality of recessed perimeter segments.

Claim 81 (original): The contact surface of claim 62, wherein the opposing perimeter segment comprises a plurality of recessed perimeter segments.

5 Claim 82 (original): The contact surface of claim 81, wherein the recessed perimeter segments recess from the opposing perimeter segment towards the gum line perimeter segment.

Claim 83 (original): The contact surface of claim 81, wherein the recessed perimeter segments recess from the opposing perimeter segment towards the gum line perimeter segment to define a noncontact area, said noncontact area for aligning noncontact with upper lateral incisor teeth.

10 Claim 84 (original): The contact surface of claim 81, wherein the recessed perimeter segments recess from the opposing perimeter segment towards the gum line perimeter segment to define a noncontact area, said noncontact area for aligning noncontact with lower lateral incisor teeth.

15 Claim 85 (original): The contact surface of claim 81, comprising a first contact area width of 0.7~1.5cm and a second contact area width of 0.8~1.5cm.

Claim 86 (original): The contact surface of claim 81, comprising a first contact area width of 0.5~1.5cm and a second contact area width of 0.6~1.5cm.

20 Claim 87 (original): The contact surface of claim 62, comprising a contact area width of 0.5~2.5cm.

Claim 88 (original): The contact surface of claim 62, comprising a contact area width of 0.5~2.5cm.

5 Claim 89 (original): The contact surface of claim 62, wherein the contact surface comprises: an adhesive layer comprising a tooth whitening agent selected from the group consisting of hydrogen peroxide, carbamide peroxide, calcium peroxide, sodium percarbonate, sodium perborate, tetrasodium pyrophosphate peroxidate, and combinations thereof and a peroxide-compatible hydrophilic glassy polymer as a base polymer, whereby the adhesive layer has little or no adhesion strength in a dry state and provides a strong adhesion to teeth while releasing the  
10 tooth whitening agent when hydrated on the enamel layers of teeth.

Claim 90 (original): The contact surface of claim 89, wherein the hydrophilic glassy polymer used in the adhesive layer is selected from the group consisting of polyalkylvinylether-maleic acid copolymer, polyvinyl alcohol, polyacrylic acid, Poloxamer 407, polyvinyl pyrrolidone-vinyl  
15 acetate copolymer, polyvinyl pyrrolidone, Polyquaterium-11, Polyquaterium-39, carbomer, hydroxypropylmethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, gelatin, sodium alginate, and combinations thereof.

Claim 91 (original): The contact surface of claim 90, wherein the adhesive layer further comprises a stabilizer for peroxide selected from the group consisting of alkylaryl sulphonates, alkyl sulphates, alkyl carboxylates, alkyldiphenyloxide disulphonates, sorbitan stearate, Sorbitan  
20 monooleate, sorbitan trioleate, and mixtures thereof.

Claim 92 (original): The contact surface of claim 90, wherein the contact surface further

comprises polyphosphate in order to enhance a teeth whitening effect.

Claim 93 (original): The contact surface of claim 92, wherein the polyphosphate is selected from the group consisting of tetrasodium pyrophosphate, sodium acid pyrophosphate, sodium hexametaphosphate, sodium tripolyphosphate, sodium potassium tripolyphosphate, tetrapotassium pyrophosphate, acidic sodium metapolysphosphate and combinations thereof.

Claim 94 (original): The contact surface of claim 62, wherein the adhesive layer contains a peroxide as a tooth whitening agent and a hydrophilic glassy polymer as a base polymer, the hydrophilic glassy polymer is selected from the group consisting of polyvinyl pyrrolidone-vinyl acetate copolymer, polyvinyl pyrrolidone, Polyquaterium-11, Polyquaterium-39, and mixtures thereof, which has a good compatibility with the peroxide and, by adjusting the solvate ratio of water to ethanol solvents used to form the adhesive layer to be in the range of about 9:1 to 0:10, stability for peroxide with time is obtained without addition of a stabilizer for peroxide and the adhesive layer provides a strong adhesion to teeth while releasing the tooth whitening agent when hydrated on the enamel layers of teeth.

Claim 95 (original): The contact surface of claim 94, wherein the peroxide is selected from the group consisting of hydrogen peroxide, carbamide peroxide, calcium peroxide, sodium percarbonate, sodium perborate, tetrasodium pyrophosphate peroxidate, and combinations thereof.

Claim 96 (original): The contact surface of claim 94, wherein the contact surface further comprises polyphosphate in order to enhance a teeth whitening effect.



Claim 97 (original): The contact surface of claim 96, wherein the polyphosphate is selected from the group consisting of tetrasodium pyrophosphate, sodium acid pyrophosphate, sodium hexametaphosphate, sodium tripolyphosphate, sodium potassium tripolyphosphate, tetrapotassium pyrophosphate, acidic sodium metapolyphosphate, and combinations thereof.

5

Claim 98 (original): The contact surface of claim 89, wherein the adhesive layer comprises polyvinyl pyrrolidone having a molecular weight greater than about 500,000.

Claim 99 (original): The contact surface of claim 98, wherein the adhesive layer further  
10 comprises a stabilizer for peroxide selected from the group consisting of alkylaryl sulphonates, alkyl sulphates, alkyl carboxylates, alkyldiphenyloxide disulphonates, sorbitan stearate, Sorbitan monooleate, sorbitan trioleate, and mixtures thereof.

Claim 100 (original): The contact surface of claim 98, wherein the contact surface further  
15 comprises polyphosphate in order to enhance a teeth whitening effect.

Claim 101 (original): The contact surface of claim 89, wherein the adhesive layer comprises polyvinyl pyrrolidone having a molecular weight greater than about 1,000,000.

20 Claim 102 (original): The contact surface of claim 89, wherein the adhesive layer comprises polyvinyl pyrrolidone having a molecular weight greater than about 1,270,000.

Claim 103 (original): The contact surface of claim 98, wherein the hydrophilic glassy polymer

in the adhesive layer consists essentially of polyvinyl pyrrolidone.

Claim 104 (original): The contact surface of claim 101, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

5

Claim 105 (original): The contact surface of claim 102, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

10

Claim 106 (original): The contact surface of claim 89, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl alcohol.

15

Claim 107 (original): The contact surface of claim 89, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of a mixture of polyvinyl pyrrolidone and polyvinyl alcohol.

20

Claim 108 (original): A dry type adhesive matrix for use in a tooth whitening apparatus, said adhesive matrix comprising a tooth whitening agent selected from the group consisting of hydrogen peroxide, carbamide peroxide, calcium peroxide, sodium percarbonate, sodium perborate, tetrasodium pyrophosphate peroxidate, and combinations thereof and a peroxide-compatible hydrophilic glassy polymer as a base polymer, whereby the adhesive matrix has little or no adhesion strength in a dry state and provides a strong adhesion to teeth while releasing the tooth whitening agent when hydrated on teeth surfaces.

Claim 109 (original): The dry type adhesive matrix of claim 108, wherein the hydrophilic

glassy polymer used in the adhesive matrix is selected from the group consisting of polyalkylvinylether-maleic acid copolymer, polyvinyl alcohol, polyacrylic acid, Poloxamer 407, polyvinyl pyrrolidone-vinyl acetate copolymer, polyvinyl pyrrolidone, Polyquaterium-11, Polyquaterium-39, carbomer, hydroxypropylmethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, gelatin, sodium alginate, and combinations thereof.

Claim 110 (original): The dry type adhesive matrix of claim 109, wherein the adhesive matrix further comprises a stabilizer for peroxide selected from the group consisting of alkylaryl sulphonates, alkyl sulphates, alkyl carboxylates, alkyldiphenyloxide disulphonates, sorbitan stearate, Sorbitan monooleate, sorbitan trioleate, and mixtures thereof.

Claim 111 (original): The dry type adhesive matrix of claim 109, wherein the adhesive matrix further comprises polyphosphate in order to enhance a teeth whitening effect.

Claim 112 (original): The dry type adhesive matrix of claim 111, wherein the polyphosphate is selected from the group consisting of tetrasodium pyrophosphate, sodium acid pyrophosphate, sodium hexametaphosphate, sodium tripolyphosphate, sodium potassium tripolyphosphate, tetrapotassium pyrophosphate, acidic sodium metapolyphosphate and combinations thereof.

Claim 113 (original): The dry type adhesive matrix of claim 108, wherein the adhesive matrix contains a peroxide as a tooth whitening agent and a hydrophilic glassy polymer as a base polymer, the hydrophilic glassy polymer is selected from the group consisting of polyvinyl pyrrolidone-vinyl acetate copolymer, polyvinyl pyrrolidone, Polyquaterium-11, Polyquaterium-39, and mixtures thereof, which has a good compatibility with the peroxide and, by adjusting the

solvate ratio of water to ethanol solvents used to form the adhesive layer to be in the range of about 9:1 to 0:10, stability for peroxide with time is obtained without addition of a stabilizer for peroxide and the adhesive layer provides a strong adhesion to teeth while releasing the tooth whitening agent when hydrated on the enamel layers of teeth.

5      Claim 114 (original): The dry type adhesive matrix of claim 113, wherein the peroxide is selected from the group consisting of hydrogen peroxide, carbamide peroxide, calcium peroxide, sodium percarbonate, sodium perborate, tetrasodium pyrophosphate peroxidate, and combinations thereof.

10      Claim 115 (original): The dry type adhesive matrix of claim 113, wherein the adhesive matrix further comprises polyphosphate in order to enhance a teeth whitening effect.

Claim 116 (original): The dry type adhesive matrix of claim 115, wherein the polyphosphate is selected from the group consisting of tetrasodium pyrophosphate, sodium acid pyrophosphate, sodium hexametaphosphate, sodium tripolyphosphate, sodium potassium tripolyphosphate, tetrapotassium pyrophosphate, acidic sodium metapolyphosphate, and combinations thereof.

15      Claim 117 (original): The dry type adhesive matrix of claim 108, wherein the adhesive matrix comprises polyvinyl pyrrolidone having a molecular weight greater than about 500,000.

20      Claim 118 (original): The dry type adhesive matrix of claim 117, wherein the adhesive matrix further comprises a stabilizer for peroxide selected from the group consisting of alkylaryl sulphonates, alkyl sulphates, alkyl carboxylates, alkyl diphenyl oxide disulphonates, sorbitan

stearate, Sorbitan monooleate, sorbitan trioleate, and mixtures thereof.

Claim 119 (original): The dry type adhesive matrix of claim 117, wherein the adhesive matrix further comprises polyphosphate in order to enhance a teeth whitening effect.

5

Claim 120 (original): The dry type adhesive matrix of claim 108, wherein the adhesive matrix comprises polyvinyl pyrrolidone having a molecular weight greater than about 1,000,000.

10

Claim 121 (original): The dry type adhesive matrix of claim 108, wherein the adhesive matrix comprises polyvinyl pyrrolidone having a molecular weight greater than about 1,270,000.

Claim 122 (original): The dry type adhesive matrix of claim 117, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

15

Claim 123 (original): The dry type adhesive matrix of claim 120, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

Claim 124 (original): The dry type adhesive matrix of claim 121, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

20

Claim 125 (original): The dry type adhesive matrix of claim 108, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl alcohol.

Claim 126 (original): The dry type adhesive matrix of claim 108, wherein the hydrophilic

glassy polymer in the adhesive layer consists essentially of a mixture of polyvinyl pyrrolidine and polyvinyl alcohol.

Claim 127 (original): A method of tooth whitening, comprising:

5 inserting a tooth whitening apparatus into a user's mouth, said tooth whitening apparatus comprising a dry type adhesive matrix comprising a tooth whitening agent selected from the group consisting of hydrogen peroxide, carbamide peroxide, calcium peroxide, sodium percarbonate, sodium perborate, tetrasodium pyrophosphate peroxidate, and combinations thereof and a peroxide-compatible hydrophilic glassy polymer as a base polymer, whereby the  
10 adhesive matrix has little or no adhesion strength in a dry state and provides a strong adhesion to teeth while releasing the tooth whitening agent when hydrated on teeth surfaces;

conforming the apparatus to the tooth surfaces of the user's mouth; and

hydrating the adhesive matrix to adhere the apparatus to tooth surfaces of the user's mouth.

15 Claim 128 (original): The method of claim 127, wherein the hydrophilic glassy polymer used in the adhesive matrix is selected from the group consisting of polyalkylvinylether-maleic acid copolymer, polyvinyl alcohol, polyacrylic acid, Poloxamer 407, polyvinyl pyrrolidone-vinyl acetate copolymer, polyvinyl pyrrolidone, Polyquaterium-11, Polyquaterium-39, carbomer,  
20 hydroxypropylmethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, gelatin, sodium alginate, and combinations thereof.

Claim 129 (original): The method of claim 128, wherein the adhesive matrix further comprises a stabilizer for peroxide selected from the group consisting of alkylaryl sulphonates, alkyl

sulphates, alkyl carboxylates, alkyl diphenyl oxide disulphonates, sorbitan stearate, Sorbitan monooleate, sorbitan trioleate, and mixtures thereof.

Claim 130 (original): The method of claim 128, wherein the adhesive matrix further comprises polyphosphate in order to enhance a teeth whitening effect.

5 Claim 131 (original): The method of claim 130, wherein the polyphosphate is selected from the group consisting of tetrasodium pyrophosphate, sodium acid pyrophosphate, sodium hexametaphosphate, sodium tripolyphosphate, sodium potassium tripolyphosphate, tetrapotassium pyrophosphate, acidic sodium metapolyphosphate and combinations thereof.

10 Claim 132 (original): The method of claim 127, wherein the adhesive matrix contains a peroxide as a tooth whitening agent and a hydrophilic glassy polymer as a base polymer, the hydrophilic glassy polymer is selected from the group consisting of polyvinyl pyrrolidone-vinyl acetate copolymer, polyvinyl pyrrolidone, Polyquaterium-11, Polyquaterium-39, and mixtures thereof, which has a good compatibility with the peroxide and, by adjusting the solvate ratio of water to ethanol solvents used to form the adhesive layer to be in the range of about 9:1 to 0:10,  
15 stability for peroxide with time is obtained without addition of a stabilizer for peroxide and the adhesive layer provides a strong adhesion to teeth while releasing the tooth whitening agent when hydrated on the enamel layers of teeth.

20 Claim 133 (original): The method of claim 132, wherein the peroxide is selected from the group consisting of hydrogen peroxide, carbamide peroxide, calcium peroxide, sodium percarbonate, sodium perborate, tetrasodium pyrophosphate peroxidate, and combinations

thereof.

Claim 134 (original): The method of claim 132, wherein the adhesive matrix further comprises polyphosphate in order to enhance a teeth whitening effect.

5 Claim 135 (original): The method of claim 134, wherein the polyphosphate is selected from the group consisting of tetrasodium pyrophosphate, sodium acid pyrophosphate, sodium hexametaphosphate, sodium tripolyphosphate, sodium potassium tripolyphosphate, tetrapotassium pyrophosphate, acidic sodium metapolyphosphate, and combinations thereof.

10 Claim 136 (original): The method of claim 127, wherein the adhesive matrix comprises polyvinyl pyrrolidone having a molecular weight greater than about 500,000.

Claim 137 (original): The method of claim 136, wherein the adhesive matrix further comprises a stabilizer for peroxide selected from the group consisting of alkylaryl sulphonates, alkyl  
15 sulphates, alkyl carboxylates, alkyl diphenyloxide disulphonates, sorbitan stearate, Sorbitan monooleate, sorbitan trioleate, and mixtures thereof.

Claim 138 (original): The method of claim 136, wherein the adhesive matrix further comprises polyphosphate in order to enhance a teeth whitening effect.

20 Claim 139 (original): The method of claim 127, wherein the adhesive matrix comprises polyvinyl pyrrolidone having a molecular weight greater than about 1,000,000.



Claim 140 (original): The method of claim 127, wherein the adhesive matrix comprises polyvinyl pyrrolidone having a molecular weight greater than about 1,270,000.

5 Claim 141 (original): The method of claim 136, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

Claim 142 (original): The method of claim 139, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

10 Claim 143 (original): The method of claim 140, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl pyrrolidone.

Claim 144 (original): The method of claim 127, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of polyvinyl alcohol

15 Claim 145 (original): The method of claim 127, wherein the hydrophilic glassy polymer in the adhesive layer consists essentially of a mixture of polyvinyl pyrrolidine and polyvinyl alcohol.

20 Claim 146 (original): A set of contact surfaces for a set of flexible teeth whitening materials, the set of contact surfaces, comprising:

an upper teeth contact surface having an upper teeth contact area,  
the upper teeth contact area comprising:

an upper teeth gum line perimeter segment, the  
upper teeth gum line perimeter segment being shaped to

substantially match an upper teeth gum line; and

at least one upper teeth perimeter segment, the at  
least one upper teeth perimeter segment joining with the  
upper teeth gum line perimeter segment to define an upper  
teeth perimeter of the upper teeth contact area; and

a lower teeth contact surface having a lower teeth contact area, the  
lower teeth contact area comprising:

a lower teeth gum line perimeter segment, the  
lower teeth gum line perimeter segment being shaped to  
substantially match a lower teeth gum line; and

at least one lower teeth perimeter segment, the at  
least one lower teeth perimeter segment joining with the  
lower teeth gum line perimeter segment to define a lower  
teeth perimeter of the lower teeth contact area.

Claim 147 (original): The set of contact surfaces of claim 146:

wherein the at least one other upper teeth perimeter segment  
comprises:

an upper teeth opposing perimeter segment being opposite  
the upper teeth gum line perimeter segment; and a plurality  
of upper teeth side perimeter segments joining the upper teeth gum  
line perimeter segment and the upper teeth opposing perimeter  
segment; and

wherein the at least one other lower teeth perimeter segment

comprises:

a lower teeth opposing perimeter segment being opposite  
the lower teeth gum line perimeter segment; and

a plurality of lower teeth side perimeter segments joining  
the lower teeth gum line perimeter segment and the lower teeth  
opposing perimeter segment.

Claim 148 (original): The set of contact surface of claim 147, wherein the upper teeth gum line  
perimeter segment comprises an upper teeth wide portion, and wherein the lower teeth gum line  
perimeter segment comprises a plurality of lower teeth wide portions.

Claim 149 (original): The set of contact surfaces of claim 148, wherein the upper teeth wide  
portion is shaped for aligning contact with the upper central incisors, and wherein the plurality of  
lower teeth wide portions are shaped for aligning contact with the lower canine teeth.

Claim 150 (original): The set of contact surfaces of claim 147, wherein each of the flexible  
teeth whitening materials comprise a patch.

Claim 151 (original): The set of contact surfaces of claim 150, wherein each of the patches  
comprise a dry-type patch.

Claim 152 (original): The set of contact surfaces of claim 147, comprising  
an upper teeth alignment indicia centered along the upper teeth gum  
line perimeter segment; and

a lower teeth alignment indicia centered along the lower teeth gum  
line perimeter segment.

Claim 153 (original): The set of contact surfaces of claim 152, wherein the upper teeth  
5 alignment indicia comprises an upper teeth alignment notch, and wherein the lower teeth  
alignment indicia comprises a lower teeth alignment notch.

Claim 154 (original): The set of contact surfaces of claim 147:

an upper teeth first side indicia positioned on the at least one other  
10 upper teeth perimeter segment;

an upper teeth second side indicia positioned on the at least one  
other upper teeth perimeter segment and opposing the first side upper teeth  
indicia along a substantially horizontal axis through the upper teeth contact  
surface, wherein the substantially horizontal axis through the upper teeth  
15 contact surface comprises an upper teeth contact surface folding axis;

a lower teeth first side indicia positioned on the at least one other  
lower teeth perimeter segment; and

a lower teeth second side indicia positioned on the at least one other  
lower teeth perimeter segment and opposing the lower teeth first side indicia  
20 along a substantially horizontal axis through the lower teeth contact surface,  
wherein the substantially horizontal axis through the lower teeth contact  
surface comprises an lower teeth contact surface folding axis.

Claim 155 (original): The set of contact surfaces of claim 154, wherein the upper teeth first side indicia, the upper teeth second side indicia, the lower teeth first side indicia, and the lower teeth second side indicia each comprise a side notch.

5 Claim 156 (original): The set of contact surfaces of claim 147, wherein the upper teeth contact surface comprises upper teeth cut lines extending from the upper teeth opposing perimeter segment to inside the perimeter of the upper teeth contact surface, and wherein the lower teeth contact surface comprises lower teeth cut lines extending from the lower teeth to opposing perimeter segment inside the perimeter of the lower teeth contact surface.

10

Claim 157 (original): The set of contact surfaces of claim 147:

wherein the upper teeth opposing perimeter segment comprises a plurality of upper teeth recessed perimeter segments to define an upper teeth noncontact area, said upper teeth noncontact area for aligning noncontact with upper lateral incisor teeth; and

15

wherein the lower teeth opposing perimeter segment comprises a plurality of lower teeth recessed perimeter segments to define a lower teeth noncontact area, said lower teeth noncontact area for aligning noncontact with lower lateral incisor teeth.

20